THE CLAIMS

What is claimed is:

1. A propellant free buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount of between 0.001 and 60 percent by weight of the total composition; and

a polar solvent in an amount between 30 and 99 percent by weight of the total composition.

2. The composition of claim 1, further comprising a taste mask and/or flavoring agent in an amount of between 0.1 and 10 percent by weight of the total composition.

3. The composition of claim 2, wherein the polar solvent is present in an amount between 37 and 98 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.005 and 55 percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 0.5 and 8 percent by weight of the total composition.

4. The composition of claim 3, wherein the polar solvent is present in an amount between 60 and 97 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.01 and 40 percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 0.75 and 7.5 percent by weight of the total composition.

5. The composition of claim 1, wherein the polar solvent is selected from the group consisting of polyethylene glycols having a molecular weight between 400 and 1000, C_2 to C_8 mono- and poly-alcohols, and C_7 to C_{18} alcohols of linear or branched configuration.

6. The composition of claim 1, wherein the polar solvent comprises polyethylene glycol.

7. The composition of claim 1, wherein the polar solvent comprises ethanol.

8. The composition of claim 2, wherein the flavoring agent is selected from the group consisting of synthetic or natural oil of peppermint, oil of spearmint, citrus oil, fruit flavors, sweeteners, and mixtures thereof.

9. A method of administering atropine to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 1.

10. The method of claim 9, wherein the amount of the spray is predetermined.

11. A buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount of between 0.1 and 25 percent by weight of the total composition;

a polar solvent in an amount between 10 and 97 percent by weight of the total composition; and

a propellant in an amount between 2 and 10 percent by weight of the total composition, wherein said propellant is a C_3 to C_8 hydrocarbon of linear or branched configuration.

12. The composition of claim 11, further comprising a taste mask and/or flavoring agent in an amount between 0.05 and 10 percent by weight of the total composition.

13. The composition of claim 12, wherein the polar solvent is present in an amount between 20 and 97 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.1 and 15 percent by weight of the total composition, the propellant is present in an amount between 2 and 5 percent by weight of the composition, and the taste mask and/or flavoring agent is present in an amount between 0.1 and 5 percent by weight of the total composition.

14. The composition of claim 13, wherein the polar solvent is present in an amount between 25 and 97 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.2 and 25 percent by weight of the total composition, the propellant is present in an amount between 2 and 4 percent by weight of the composition, and taste mask and/or flavoring agent is present in an amount between 0.1 and 2.5 percent by weight of the total composition.

15. The composition of claim 11, wherein the polar solvent is selected from the group consisting of polyethyleneglycols having a molecular weight between 400 and 1000, C_2 to C_8 mono- and poly-alcohols, and C_7 to C_{18} alcohols of linear or branched configuration.

16. The composition of claim 15, wherein the polar solvent comprises polyethylene glycol.

17. The composition of claim 15, wherein the polar solvent comprises ethanol.

18. The composition of claim 11, wherein the flavoring agent is selected from the group consisting of synthetic or natural oil of peppermint, oil of spearmint, citrus oil, fruit flavors, sweeteners, and mixtures thereof.

19. The composition of claim 11, wherein the propellant is selected from the group consisting of propane, *N*-butane, *iso*-butane, *N*-pentane, *iso*-pentane, *neo*-pentane, and mixtures thereof.

20. A method of administering atropine or a pharmaceutically acceptable salt thereof to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 11.

21. The method of claim 20, wherein the amount of the spray is predetermined.

22. A propellant free buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount between 0.005 and 55 percent by weight of the total composition; and

a non-polar solvent in an amount between 30 and 99 percent by weight of the total composition.

23. The composition of claim 22, further comprising a taste mask and/or flavoring agent in an amount between 0.1 and 10 percent by weight of the total composition.

24. The composition of claim 23, wherein the flavoring agent is selected from the group consisting of synthetic or natural oil of peppermint, oil of spearmint, citrus oil, fruit flavors, sweeteners, and mixtures thereof.

25. The composition of claim 22, wherein the solvent is selected from the group consisting of (C_2-C_{24}) fatty acid (C_2-C_6) esters, C_7-C_{18} hydrocarbons of linear or branched configuration, C_2-C_6 alkanoyl esters, and triglycerides of C_2-C_6 carboxylic acids.

26. The composition of claim 25, wherein the solvent is a triglyceride.

27. A method of administering atropine or a pharmaceutically acceptable salt thereof to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 22.

28. The method of claim 27, wherein the amount of the spray is predetermined.

29. A buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount between 0.05 and 50 percent by weight of the total composition; and

a non-polar solvent in an amount between 19 and 85 percent by weight of the total composition; and

a propellant in an amount between 5 and 80 percent by weight of the total composition, wherein said propellant is a C_3 to C_8 hydrocarbon of linear or brancehed configuration.

30. The composition of claim 29, further comprising a taste mask and/or flavoring agent in an amount of between 0.1 and 10 percent by weight of the total composition.

31. The composition of claim 30, wherein the flavoring agent is selected from the group consisting of synthetic or natural oil of peppermint, oil of spearmint, citrus oil, fruit flavors, sweeteners, and mixtures thereof.

32. A buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount between 0.01 and 40 percent by weight of the total composition;

a non-polar solvent in an amount between 25 and 89 percent by weight of the total composition;

a propellant in an amount between 10 and 70 percent by weight of the total composition, wherein said propellant is a C_3 to C_8 hydrocarbon of linear or brancehed configuration; and

a taste mask and/or flavoring agent is present in an amount between 1 and 8 percent by weight of the total composition.

33. The composition of claim 32, wherein the propellant is present in an amount between 20 and 70 percent by weight of the total composition, the non-polar solvent is present in an amount between 25 and 75 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount from between 0.25 and 35 percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 2 and 7.5 percent by weight of the total composition.

34. The composition of claim 29, wherein the propellant is selected from the group consisting of propane, *n*-butane, *iso*-butane, *n*-pantane, *iso*-pentane, *neo*-pentane, and mixtures thereof.

35. The composition of claim 34, wherein the propellant is *n*-butane or *iso*-butane and has a water content of not more than 0.2 percent and a concentration of oxidizing agents, reducing agents, Lewis acids, and Lewis bases of less than 0.1 percent.

36. The composition of claim 29, wherein the solvent is selected from the group consisting of (C_2-C_{24}) fatty acid (C_2-C_6) esters, C_7-C_{18} hydrocarbons of linear or branched configuration, C_2-C_6 alkanoyl esters, and triglycerides of C_2-C_6 carboxylic acids.

37. The composition of claim 36, wherein the solvent is triglyceride.

38. A method of administering atropine or a pharmaceutically acceptable salt thereof to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 29.

39. The method of claim 38, wherein the amount of the spray is predetermined.

40. A buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount between 0.2 and 10 percent by weight of the total composition; and

a polar solvent comprising propylene glycol and ethanol in an amount between 50 and 99 percent by weight of the total composition.

41. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

42. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

43. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

44. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

45. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising

spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

46. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

47. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

48. The method of claim 47, wherein the excessive salivation is caused by heavy metal poisoning.

49. The method of claim 48, wherein the excessive salivation is caused by parkinsonism.

50. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

51. The method of claim 50, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

52. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

53. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

54. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

55. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 1.

56. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

57. The method of claim 56, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

58. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

59. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

60. The method of claim 59, further comprising administering an opioid to the patient.

61. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 1.

62. The method of claim 61, wherein the anticholinesterase agent is a nerve gas.

63. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

64. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

65. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

66. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

67. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

68. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

69. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

70. The method of claim 69, wherein the excessive salivation is caused by heavy metal poisoning.

71. The method of claim 69, wherein the excessive salivation is caused by parkinsonism.

72. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

73. The method of claim 72, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

74. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

75. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

76. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

77. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 11.

78. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

79. The method of claim 78, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

80. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

81. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

82. The method of claim 81, further comprising administering an opioid to the patient.

83. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 11.

84. The method of claim 83, wherein the anticholinesterase agent is a nerve gas.

85. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

86. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

87. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

88. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

89. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

90. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

91. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

92. The method of claim 91, wherein the excessive salivation is caused by heavy metal poisoning.

93. The method of claim 91, wherein the excessive salivation is caused by parkinsonism.

94. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

95. The method of claim 94, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

96. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

97. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

98. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

99. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 22.

100. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

101. The method of claim 100, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

102. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

103. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

104. The method of claim 103, further comprising administering an opioid to the patient.

105. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 22.

106. The method of claim 105, wherein the anticholinesterase agent is a nerve gas.

107. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

108. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

109. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

110. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

111. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

112. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

113. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

114. The method of claim 113, wherein the excessive salivation is caused by heavy metal poisoning.

115. The method of claim 113, wherein the excessive salivation is caused by parkinsonism.

116. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

117. The method of claim 116, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

118. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

119. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

120. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

121. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 29.

122. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

123. The method of claim 122, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

124. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

125. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

126. The method of claim 125, further comprising administering an opioid to the patient.

127. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 29.

128. The method of claim 127, wherein the anticholinesterase agent is a nerve gas.

129. A propellant free buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount of between 0.001 and 60 percent by weight of the total composition; and

a mixture of a polar solvent and a non-polar solvent in an amount of between 30 and 99.69 percent by weight of the total composition, wherein the ratio of the polar solvent to the non-polar solvent ranges from 1:99 to 99:1.

130. The composition of claim 129, further comprising a taste mask and/or flavoring agent in an amount of between 0.1 and 10 percent by weight of the total composition.

131. The composition of claim 130, wherein the polar solvent is present in an amount between 37 and 98 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.005 and 55

percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 0.5 and 8 percent by weight of the total composition.

132. The composition of claim 131, wherein the polar solvent is present in an amount between 60 and 97 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount between 0.01 and 40 percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 0.75 and 7.5 percent by weight of the total composition.

133. The composition of claim 129, wherein the polar solvent is selected from the group consisting of polyethylene glycols having a molecular weight between 400 and 1000, C_2 to C_8 mono- and poly-alcohols, and C_7 to C_{18} alcohols of linear or branched configuration and the non-polar solvent is selected from the group consisting of (C_2-C_{24}) fatty acid (C_2-C_6) esters, C_7-C_{18} hydrocarbons of linear or branched configuration, C_2-C_6 alkanoyl esters, and triglycerides of C_2-C_6 carboxylic acids.

134. The composition of claim 130, wherein the flavoring agent is selected from the group consisting of synthetic or natural oil of peppermint, oil of spearmint, citrus oil, fruit flavors, sweeteners, and mixtures thereof.

135. A method of administering atropine to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 129.

136. The method of claim 135, wherein the amount of the spray is predetermined.

137. A buccal spray composition for transmucosal administration of atropine or a pharmaceutically acceptable salt thereof comprising:

atropine or a pharmaceutically acceptable salt thereof in an amount between 0.05 and 50 percent by weight of the total composition;

a mixture of a polar and a non-polar solvent in an amount between 10 and 97 percent by weight of the total composition, wherein the ratio of the polar solvent to the non-polar solvent ranges from 1:99 to 99:1; and

a propellant in an amount between 5 and 80 percent by weight of the total composition, wherein said propellant is a C_3 to C_8 hydrocarbon of linear or branched configuration.

138. The composition of claim 137, further comprising a taste mask and/or flavoring agent is present in an amount between 0.01 and 10 percent by weight of the total composition.

139. The composition of claim 138, wherein the propellant is present in an amount between 10 and 70 percent by weight of the total composition, the solvent is present in an amount between 20 and 97 percent by weight of the total composition, the atropine or a pharmaceutically acceptable salt thereof is present in an amount from between 0.1 and 40 percent by weight of the total composition, and the taste mask and/or flavoring agent is present in an amount between 1and 8 percent by weight of the total composition.

140. The composition of claim 137, wherein the propellant is selected from the group consisting of propane, *n*-butane, *iso*-butane, *n*-pentane, *iso*-pentane, *neo*-pentane, and mixtures thereof.

141. The composition of claim 140, wherein the propellant is *n*-butane or *iso*-butane and has a water content of not more than 0.2 percent and a concentration of oxidizing agents, reducing agents, Lewis acids, and Lewis bases of less than 0.1 percent.

142. The composition of claim 137, wherein the polar solvent is selected from the group consisting of polyethylene glycols having a molecular weight between 400 and 1000, C_2 to C_8 mono- and poly-alcohols, and C_7 to C_{18} alcohols of linear or branched configuration and the non-polar solvent is selected from the group consisting of (C_2-C_{24}) fatty acid (C_2-C_6) esters, C_7-C_{18} hydrocarbons of linear or branched configuration, C_2-C_6 alkanoyl esters, and triglycerides of C_2-C_6 carboxylic acids.

143. A method of administering atropine or a pharmaceutically acceptable salt thereof to a mammal comprising spraying the oral mucosa of the mammal with the composition of claim 129.

144. The method of claim 143, wherein the amount of the spray is predetermined.

145. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

146. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

147. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

148. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

149. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

150. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

151. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

152. The method of claim 151, wherein the excessive salivation is caused by heavy metal poisoning.

153. The method of claim 151, wherein the excessive salivation is caused by parkinsonism.

154. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

155. The method of claim 154, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

156. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

157. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

158. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

159. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 129.

160. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

161. The method of claim 160, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

162. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

163. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

164. The method of claim 163, further comprising administering an opioid to the patient.

165. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 129.

166. The method of claim 165, wherein the anticholinesterase agent is a nerve gas.

167. A method of blocking the effects of acetylcholine at muscarine receptors in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

168. A method of treating an ulcer in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

169. A method of treating a disorder resulting from excessive smooth muscle contraction in the gastrointestinal tract in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

170. A method of treating irritable-bowel syndrome in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

171. A method of treating intestinal hypermotility and increased frequency of stools associated with administration of an antihypertensive agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

172. A method of treating diarrhea associated with mild dysentery or diverticulitis in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

173. A method of reducing excessive salivation in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

174. The method of claim 173, wherein the excessive salivation is caused by heavy metal poisoning.

175. The method of claim 173, wherein the excessive salivation is caused by parkinsonism.

176. A method of reducing secretions in the upper and lower respiratory tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

177. The method of claim 176, wherein the secretions in the upper and lower respiratory tract are caused by acute rhinitis.

178. A method of treating parkinsonism in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

179. A method of treating cardiovascular collapse resulting from the administration of a choline ester or an inhibitor of cholinesterase in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

180. A method of antagonizing vagal cardiac slowing in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

181. A method of treating acute myocardial infarction where excessive vagal tone causes sinus or nodal bradycardia or atrioventricular block in a patient comprising spraying the oral mucosa of the patient with the buccal spray composition of claim 137.

182. A method of administering anaesthesia to a patient comprising pre-medicating the patient with atropine prior to administering the anaesthesia by spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

183. The method of claim 182, wherein the anesthetics, is selected from the group consisting of halothane, suxamethonium, and neostigmine.

184. A method of relaxing muscles in the gastrointestinal tract of a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

185. A method of treating renal colic in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

186. The method of claim 185, further comprising administering an opioid to the patient.

187. A method of treating intoxication from exposure to an anticholinesterase agent in a patient comprising spraying the oral mucosa of the patient with a therapeutically effective amount of the buccal spray composition of claim 137.

188. The method of claim 187, wherein the anticholinesterase agent is a nerve gas.